

**REMARKS**

Claims 1-3 are pending in the present application. Claims 1-3 have been amended to recite that the microorganism is “isolated.” No new matter has been added by way of the above amendments.

**Issues under 35 U.S.C. § 101**

The Examiner has rejected claims 1-3 under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. Specifically, the Examiner asserts that the claims read on a microorganism which may occur in nature and products of nature are not deemed to be patentable subject matter. Applicants respectfully traverse in view of the amended claims.

Applicants have amended the pending claims to recite an “isolated microorganism.” Accordingly, Applicants respectfully submit that the outstanding rejection has been overcome and should be removed.

**Issues under 35 U.S.C. § 112, first paragraph**

The Examiner has rejected claims 1-3 under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification. Applicants respectfully traverse based on the following considerations.

The Examiner notes that Applicants have deposited the organism but states that there is no indication in the specification as to public availability. As indicated on page 3, lines 23-25, the claimed microorganism was deposited under the Budapest Treaty to the Korean Culture Center of Microorganisms on November 25, 2003, with accession Number KCCM 10530.

According to MPEP 2411.02, once a rejection under 35 U.S.C. § 112 has been made by the Examiner directed to the absence of access to a biological material, Applicants may reply, pursuant to 37 CFR § 1.809(b)(1), by assuring the USPTO in writing that an acceptable deposit will be made on or before the date of payment of the issue fee.

In order to certify that the deposit meets the criteria set forth in 37 CFR § 1.801-1.809, Applicants herein provide assurance of compliance by the statement below signed by the attorney of record:

The microorganism of the present invention will be irrevocably and without restriction or condition released to the public upon the issuance of a patent.

Thus, Applicants respectfully submit that the outstanding rejection has been overcome and should be removed.

#### **Issues under 35 U.S.C. § 112, second paragraph**

The Examiner has rejected claims 1-3 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, claims 1-3 are allegedly vague and indefinite for failing to recite a biologically pure microorganism because it is unclear that the microorganism as claimed has been purified by the hand of man. Applicants respectfully traverse in view of the amended claims.

Applicants have amended the pending claims to recite an “isolated microorganism.” Accordingly, Applicants respectfully submit that the outstanding rejection has been overcome and should be removed.

#### **Issues under 35 U.S.C. § 102(b)**

The Examiner has rejected claims 1-3 under 35 U.S.C. § 102(b) as being anticipated by Korean Patent Abstract 1020010089980 (hereinafter referred to as “KR ‘980”). Applicants respectfully assert that KR ‘980 does not disclose each and every aspect of independent claim 1, from which claims 2-3 depend. As such, Applicants respectfully traverse this rejection. Reconsideration and withdrawal of this rejection are respectfully requested based on the following considerations.

KR ‘980 relates to a microorganism SaO-4-23 (Accession Number: KFCC-11139) producing 5<sup>1</sup>-xanthyllic acid, which is a mutant strain of *Corynebacterium ammoniagenes*, and characterized by having a resistance to sodium azide and a reinforced electron transport system,

thereby having improved productivity of 5-xanthyllic acid (abstract). However, the microorganism of the present invention is characterized by having a resistance to 5-fluorotryptophan.

In addition, the microorganism of KR '980 is obtained by treating *Corynebacterium ammoniagenes* (KFCC 10743) with mutagens such as N-methyl-N-nitro-N-nitrosoguanidine (NTG) or UV rays and selecting a mutant strain among these, which can grow in a culture medium having different concentration levels of sodium azide therein (abstract).

However, the microorganism of the present invention is obtained by treating *Corynebacterium ammoniagenes* (KFCC 10448) with mutagens such as N-methyl-N-nitro-N-nitrosoguanidine (NTG) or UV rays and selecting a mutant strain among these, which can grow in a culture medium having different concentration levels of fluorotryptophan therein to have sodium azide resistance and a reinforced electron transport system.

Therefore, the microorganism of KR '980 can have a resistance to sodium azide and reinforced electron transport system and has an increased resistance to a high concentration of 5'-xanthyllic acid and saccharide to have improved productivity of 5-xanthyllic acid.

However, the microorganism of the present invention is given a resistance to 5-fluorotryptophan in order to enhance biosynthesis of N5,N10-tetrahydrofolate used for transferring two formyl groups during the process of purine biosynthesis, and the strain has an effect on accumulating 5'-xanthyllic acid in a culture medium at a high yield and high concentration rate for the same period of fermentation.

The Examiner asserts that the mutant strain of KR '980 is identical and will inherently have resistance to 5-fluorotryptophan. As discussed above, Applicants respectfully traverse this assertion. Moreover, to support an anticipation rejection based on inherency, the Examiner must provide factual and technical grounds establishing that the inherent feature *necessarily* flows from the teachings of the prior art. The inherency *must* flow as a necessary conclusion from the prior art and cannot be simply a possible one. In other words, for the Examiner to be correct, the exemplified embodiments of KR '980 must have all the allegedly inherent features. Applicants respectfully submit that the inherent feature does not necessarily flow from the teachings of KR

'980 and that the exemplified embodiments of KR '980 do not have all the allegedly inherent features.

Accordingly, the present invention is not anticipated by KR '980 since the reference does not teach or provide for each of the limitations recited in the pending claims.

For completeness, Applicants also respectfully submit that KR '980 does not render the present invention obvious because the reference provides no disclosure, reason, or rationale that would allow one of ordinary skill in the art to arrive at the present invention as claimed.

### **CONCLUSION**

Based upon the amendments and remarks presented herein, the Examiner is respectfully requested to issue a Notice of Allowance clearly indicating that each of pending claims 1-3 are allowed and patentable under the provisions of Title 35 of the United States Code.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Chad M. Rink, Reg. No. 58,258 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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